

Lucas Trojanowski
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Education:

University of Illinois, Urbana-Champaign (2020-Present)

MS in Applied Mathematics, Concentration in Applications to the Sciences

GPA: 3.93/4.00

University of Illinois, Urbana-Champaign (2016-2020)

BSLAS with High Distinction in Mathematics, Minor in Physics

GPA: 3.89/4.00, Graduated Cum Laude

Skills:

Languages: Python, C/C++, MATLAB, Mathematica, LaTeX

Software: LAMMPS, VASP, OriginPro, Windows, iOS, and Linux operating systems

Other: Experience working with PMTs, lock-in amplifiers, electronic test equipment, and various experimental methods including Moessbauer spectroscopy and optical pumping

Experience:

sPHENIX Electronic Calorimetry Technician: UIUC Nuclear Physics Laboratory (June 2021-Dec 2021)

Used a PMT, function generator, camera, and Linux-based image processing software to perform tests on electronic calorimetry blocks. Conducted data analysis to ensure a high rate of transmission of light and proper distribution of scintillated light energies.

Graduate Teaching Assistant: NETMATH UIUC (August 2020-Dec 2020)

Responsible for grading exams, grading homework, and for providing instructional feedback on student questions related to Calculus I, II, and III. Communicated with students to explain course-related concepts.

Undergraduate Researcher: Illinois Geometry Lab *Finite Subalgebras of the Steenrod Algebra* (Spring 2020)

Constructed an algorithm to calculate the Adem relations between different elements within a given Steenrod algebra. Used the algorithm to identify subalgebras within the $p=2$ and $p=3$ Steenrod Algebras. Presented our findings virtually at the Spring 2020 IGL research symposium.

Undergraduate Researcher: Illinois Geometry Lab *Talbot Effect on Dispersive PDEs* (Fall 2018)

Implemented Runge-Kutta and Euler methods in Python to solve dispersive PDEs in search of measuring their oscillatory behavior. Developed algorithms to measure the Minkowski dimension of various solutions, leading to experimental evidence for an upper bound on fractal-like behavior of plots. Presented findings in the Fall 2018 IGL research symposium.

Awards and Honors:

University of Illinois Vincent O. Greene Department of Mathematics Scholarship Recipient (2016-2020):

Awarded to undergraduate mathematics students based on academic merit.

College of LAS James Scholar (2016-2020):

Given to the top 12% of incoming freshman, James Scholar status demands that students maintain at least a 3.5 GPA and complete tasks which either involve the student in the Champaign-Urbana community or enrich the student's learning experience.

University of Illinois Chancellor's Scholar (2016-2020):

Approximately 125 (of about 7,500) incoming freshmen are selected as Chancellor's Scholars, based on academic merit.